

5. Use algebra tiles to model each sum of binomials. Record your answer symbolically.

- a) $(5g + 3) + (2g + 4)$
- b) $(3 - 2j) + (-4 + 2j)$
- c) $(p + 1) + (5p - 6)$
- d) $(7 + 4m) + (-5m + 4)$

8. Use a personal strategy to add.

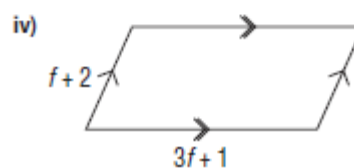
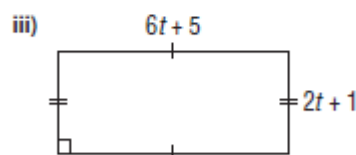
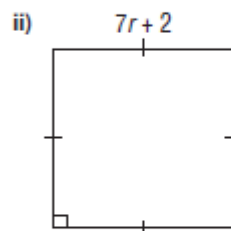
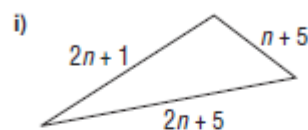
- a) $(6x + 3) + (3x + 4)$
- b) $(5b - 4) + (2b + 9)$
- c) $(6 - 3y) + (-3 - 2y)$
- d) $(-n + 7) + (3n - 2)$
- e) $(-4s - 5) + (6 - 3s)$
- f) $(1 - 7h) + (-7h - 1)$
- g) $(8m + 4) + (-9 + 3m)$
- h) $(-8m - 4) + (9 - 3m)$

9. Add. Which strategy did you use each time?

- a) $(4m^2 + 4m - 5) + (2m^2 - 2m + 1)$
- b) $(3k^2 - 3k + 2) + (-3k^2 - 3k + 2)$
- c) $(-7p - 3) + (p^2 + 5)$
- d) $(9 - 3t) + (9t + 3t^2 - 6t)$
- e) $(3x^2 - 2x + 3) + (2x^2 + 4)$
- f) $(3x^2 - 7x + 5) + (6x - 6x^2 + 8)$
- g) $(6 - 7x + x^2) + (6x - 6x^2 + 10)$
- h) $(1 - 3r + r^2) + (4r + 5 - 3r^2)$

10. a) For each shape below, write the perimeter:

- as a sum of polynomials
- in simplest form



- b) Use substitution to check each answer in part a.

12. A student added $(4x^2 - 7x + 3)$ and $(-x^2 - 5x + 9)$ as follows.

$$\begin{aligned}
 &(4x^2 - 7x + 3) + (-x^2 - 5x + 9) \\
 &= 4x^2 - 7x + 3 - x^2 - 5x + 9 \\
 &= 4x^2 - x^2 - 7x - 5x + 3 + 9 \\
 &= 3x^2 - 2x + 1
 \end{aligned}$$

Is the student's work correct?

If not, explain where the student made any errors and write the correct answer.

15. Create a polynomial that is added to

$3x^2 + 7x + 2$ to get each sum.

- a) $5x^2 + 10x + 1$ b) $2x^2 + 5x + 8$
c) $4x^2 + 3x$ d) $-x^2 + x - 1$
e) $2x + 3$ f) 4

17. Add.

- a) $(3x^2 - 2y^2 + xy) + (-2xy - 2y^2 - 3x^2)$
b) $(-5q^2 + 3p - 2q + p^2) + (4p + q + pq)$
c) $(3mn + m^2 - 3n^2 + 5m) + (7n^2 - 8n + 10)$
d) $(3 - 8f + 5g - f^2) + (2g^2 - 3f + 4g - 5)$

18. a) The polynomials $4x - 3y$ and $2x + y$ represent the lengths of two sides of a triangle. The perimeter of the triangle is $9x + 2$. Determine the length of the third side.

- b) Use substitution to check your solution in part a.

19. The polynomial $5y + 3x + 7$ represents the perimeter of an isosceles triangle. Write three polynomials that could represent the side lengths of the triangle. Find as many answers as you can.